

DR. ALEX HUBERT

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EDUCATION

Physicist - PhD

[University of Warwick](#)

August 2014 – July 2019

Coventry, UK

- By using computer control of a JEOL 2100 microscope and in house Bloch wave simulation software I showed it was possible to obtain highly accurate and precise structural refinement measurements using the D-LACBED technique
- I wrote as well as edited sections of the MPI simulation software and ran it (using shell scripting) on the Warwick supercomputer as well as the national supercomputer facility (Archer)
- All the data (barring GaAs) was taken by myself on the electron microscope

MPHYS Physics

[University of Kent](#)

September 2010 – July 2014

Canterbury, UK

EXPERIENCE

Public Speaker - Seeking Counsel Event

[University of Warwick](#)

March 2019

Coventry, UK

- Wrote, organised (including video capture) and performed an independent talk on my experiences of counselling
- Working with the university, I promoted the talk using posters, a trailer and a website. I advertised on public displays around campus and through social media.
- Lead to opportunities to speak at seminars usually occupied by higher level academics, such as the [Imperial college undergraduate lunchtime series](#)

Wellbeing and Peer Support officer (Student Staff Liason Committee)

[University of Warwick](#)

March 2018 – May 2018

Coventry, UK

- Noticed very little support in terms of wellbeing for PhD students within the physics department
- Went to a PGSSLC meeting and suggested the position. Consequently became the first representative for the wellbeing of physics PhD students.
- Set up the wellbeing peer support group. A lunchtime coffee where students could talk about any issue within or surrounding academic life. It was the first department (to my knowledge) within the university to set up a wellbeing support group
- My successors have continued the work, introducing questionnaires and interviews for students as awareness grows

ACHIEVEMENTS AND QUALIFICATIONS



3MT

University wide three minute thesis finalist 2019



Front cover

My paper "Structural refinement from 'digital' large angle convergent beam electron diffraction patterns" made the front cover of [Ultramicroscopy magazine - volume 198](#).



HPC autumn academy

2 week (full time) introductory course in high performance computing (parallel programming) using C



HPC MPAGS

4th year module (10 weeks) at the University of Warwick in High performance computing as part of the midlands alliance PhD courses



PCG summer school

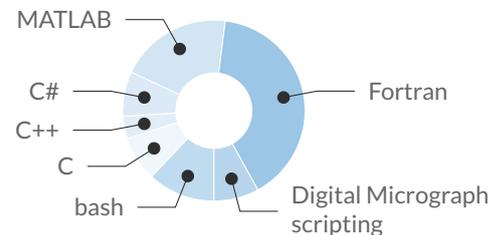
1 week (full time) course on physical crystallography



ECB level 1

2-day cricket coaching course

PROGRAMMING LANGUAGES



**I also have experience using Python and Parallel programming implementations (MPI/OpenMP)*

SOFTWARE



felix

Bloch wave simulation software



CrystalViewer_VR

Creates models of crystal structures in virtual reality (unfinished)

EXPERIENCE (CONT.)

Social Secretary - Mind Aware Society

University of Warwick

May 2017 - September 2017

Coventry, UK

Undergraduate Laboratory Demonstrator

University of Warwick

October 2014 - March 2017

Coventry

Women's Head Coach and Second Team Captain (cricket club)

University of Kent

July 2013 - May 2014

Canterbury, UK

- I was influential in helping to drive membership up to the highest it had been in the past 3 years, stabilising the women's team (from near collapse) for the foreseeable future
- Achieved through: stalls on campus, engaging with first year students at freshers fayre - selling them the idea of cricket, using an energetic/uplifting coaching style and a willingness to give time to each member for any concerns.
- I lead a team effectively through a shared philosophy. I created a trustworthy, passionate and close-knit group.

SKILLS

Emotional intelligence

Through counselling, acting, meditation, dance and further wellbeing practices over the past 8 years, I have developed an emotional skill-set which has enhanced the majority of my technical abilities. Through a high level of self-awareness I understand the emotions which drive my work allowing an efficient work ethic. My education in emotional understanding has been influential in communication between others, meaning I can understand others perspectives, getting to the root of many kinds of problems quickly.

From experimental data to computer science

I have gone through the whole process of personally collecting experimental data to be processed then input into a program I helped write (My programming work in Felix during the first 2 years of my PhD involved transcribing mathematical theory from papers into algorithms, then to fully working code.) which I ran on a supercomputer. I then analysed the results. This culminated in my first authored paper.

Research in science

I know how to search for and understand research papers. This can lead to fleshing out of ideas, or even brand new ideas. This also means that I can decipher sources to trust and ones not to trust. Through my work in physics I am able to analyse, interpret and visualise complex datasets, which I have shown to be able to communicate simply and effectively.

FINANCIAL AWARDS

Cr Barber Trust - Institute of physics travel grant

- awarded £300 for travel expenses to attend the IMC19 conference in Sydney

Research Student Conference Fund - Institute of physics travel grant

- awarded £300 by the electron microscopy and analysis group for travel expenses to attend the IMC19 conference in Sydney

ARCHER

- Contributor for the project: Bloch-Wave Simulations for digital large angle convergent beam electron diffraction, number: e370. For the ARCHER supercomputer. Award: £20,798.90

FURTHER SKILLS

Public Speaking

Acting*

Article Writing

LaTeX

modelling

mathematics

algorithm creation

meditation

operate transmission electron microscope

Driving licence (8+ years)

*classes taken at Teatro theatre school

CLUBS AND SOCIETIES

Chearsley cricket club

University of Kent cricket club

University of Warwick mind aware society

Birmingham city Korfbal club

University of Warwick Korfbal club

ACTIVITIES AND INTERESTS

Cricket

Korfbal

Football

Tennis

Squash

Origami

Reading

Psychology

Philosophy

Dancing

PUBLICATIONS

Thesis

- A.J.M. Hubert (2019). *Structural refinement of single crystals using digital-large angle convergent beam electron diffraction patterns*. University of Warwick.

Journal Articles

- A.J.M. Hubert, R. Römer, R. Beanland (2019). "Structure refinement from 'digital' large angle convergent beam electron diffraction patterns". In: *Ultramicroscopy* 198, pp. 1–9.
- J.L. Hart, ..., A.J.M. Hubert, ..., R. Beanland et al. (2016). "Electron-beam-induced ferroelectric domain behavior in the transmission electron microscope: Toward deterministic domain patterning". In: *Physical Review B* 94.17, p. 174104.

POSTER PRESENTATIONS

Conference Proceedings

- A.J.M. Hubert, R. Römer, R. Beanland (2018a). "Isotropic Debye-Waller factor measurements for Cu, SrTiO₃ and GaAs using digital electron diffraction". In: International Convention Centre, Sydney: 19th International Microscopy Congress.
- – (2018b). "Isotropic Debye-Waller factor measurements for Cu, SrTiO₃ and GaAs using digital electron diffraction". In: Abingdon, UK: Physical crystallography group summer school.
- A.J.M. Hubert, K. Evans et al. (2015). "Felix: open source Bloch wave simulation and refinement software". In: Manchester, UK: Microscience Microscopy Congress.

ARTICLES

What's therapy got to do with it?

- [Thesis Whisperer](#)
- [Mental Movement magazine](#)

Scientific discovery under Nazi Rule – The curious case of Walther Kossel and Gottfried Möllenstedt

- [Science Comma blog - University of Kent](#)

In search of more time

- [PhD Life blog - University of Warwick](#)

Counselling as an education

- [Mental Movement magazine](#)

ORAL PRESENTATIONS

Three Minute Thesis*

 June 2019

Seeking Counsel*

 February & March 2018

For Warwick Mind Aware Society and Independent

Isotropic Debye-Waller factor measurements for Cu, SrTiO₃ and GaAs using digital electron diffraction

 March 2018

Conference presentation given at the annual British Crystallographic Spring Meeting

Probing the shape of atoms with digital electron diffraction

 March 2018

Scientific presentation given at the Warwick postgraduate seminar series

Meditation: The key to life's game of snakes and ladders*

 December 2017 & February 2018

Personal presentation given at the Warwick postgraduate seminar series and undergraduate physics cafe series

Simulating pretty pictures: A Bloch wave solution

 January 2015

Scientific presentation given at the Warwick postgraduate seminar series

*Follow links for info and video